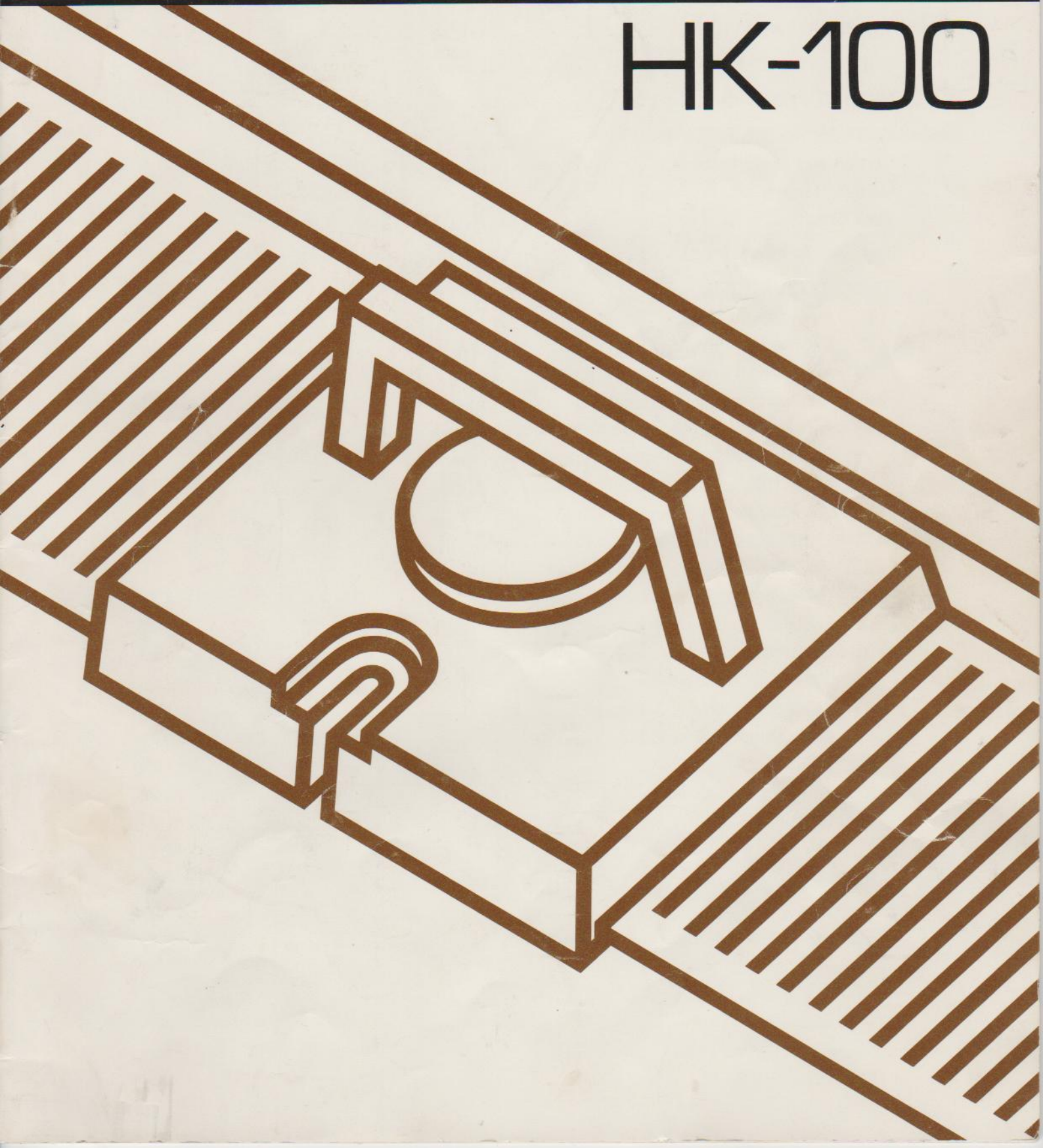


INSTRUCTION MANUAL

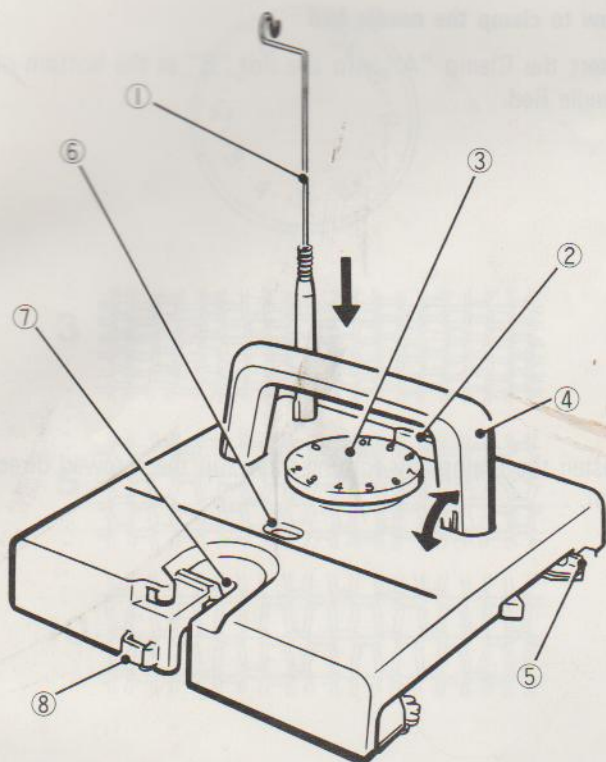
HK-100



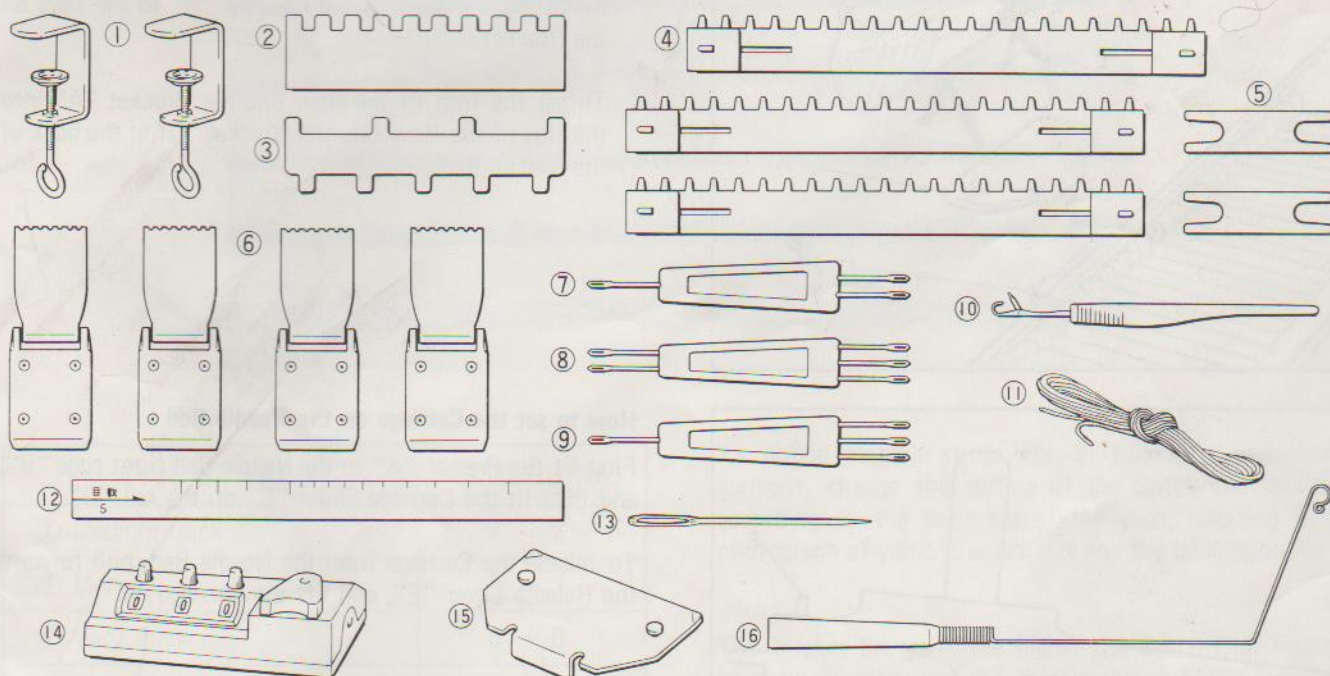
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CARRIAGE AND ACCESSORIES



1. TENSION SPRING
Take up slack on the yarn.
2. RELEASE LEVER
Release the Carriage from the Needle Bed.
3. STITCH DIAL
Regulates the size of stitches.
4. HANDLE
Raise for operation, and lay down when storing.
5. PASSING LEVER
Pass the Carriage to the other side of the fabric without knitting.
* By operating these levers, Slip stitch can be knitted.
6. KNITTING DIRECTION
Indicates the direction in which the Carriage is knitting.
7. YARN FEEDER
Yarn is fed to the needles through Yarn Feeder.
8. YARN GUIDE
Holds the yarn. Guide the knitting yarn through the YARN GUIDE first.

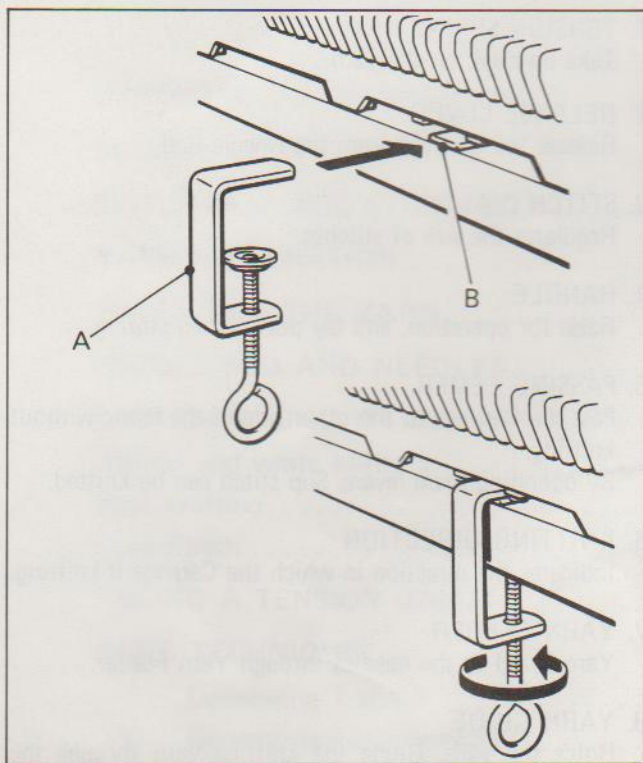


1. Clamp (2)
2. Needle Pusher (1/1-0)
3. Needle Pusher (1/3-1/5)
4. Cast-on Comb (3)
5. Comb Connector (2)

6. Claw Weight (4)
7. Transfer Tool (1-2)
8. Transfer Tool (2-3)
9. Transfer Tool (1-3)
10. Tappet Tool

11. Ravel Cord
12. Gauge Scale
13. Tapestry Needle
14. Row Counter
15. Row Counter Bracket
16. Tension

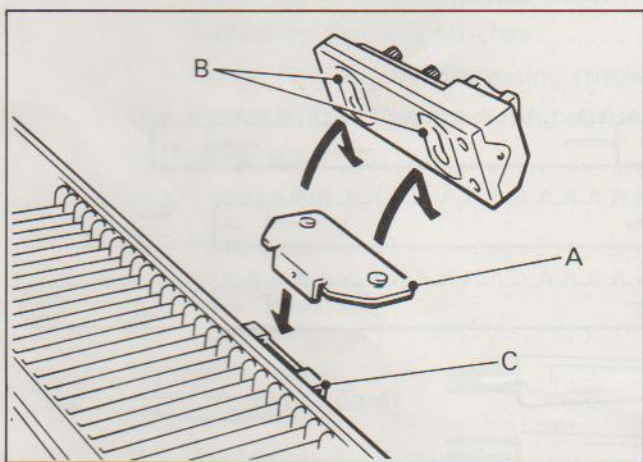
SETTING UP THE MACHINE



How to clamp the needle bed

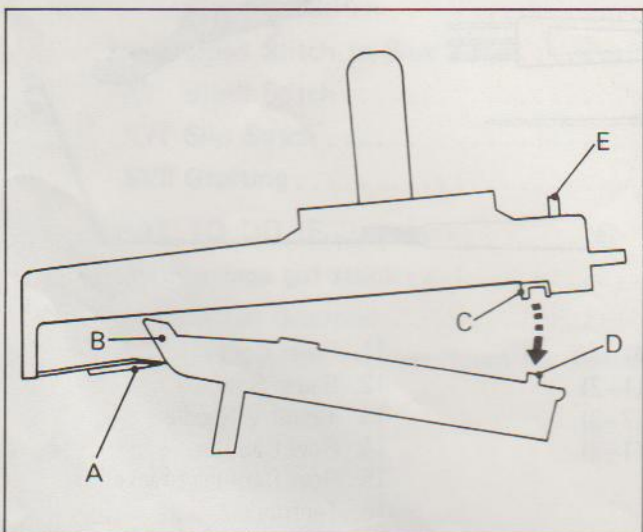
Insert the Clamp "A" into the slot "B" at the bottom of Needle Bed.

Fasten the Clamps by turning screws in the arrowed direction.



How to attach the Row Counter

1. Set the Row Counter on the Row Counter Bracket "A" by fitting the slots of the Counter "B" to the keys on the Bracket.
2. Thrust the foot of the Row Counter Bracket "A" into the slot of the Row Counter Bracket "C" at the back of the Needle Bed.

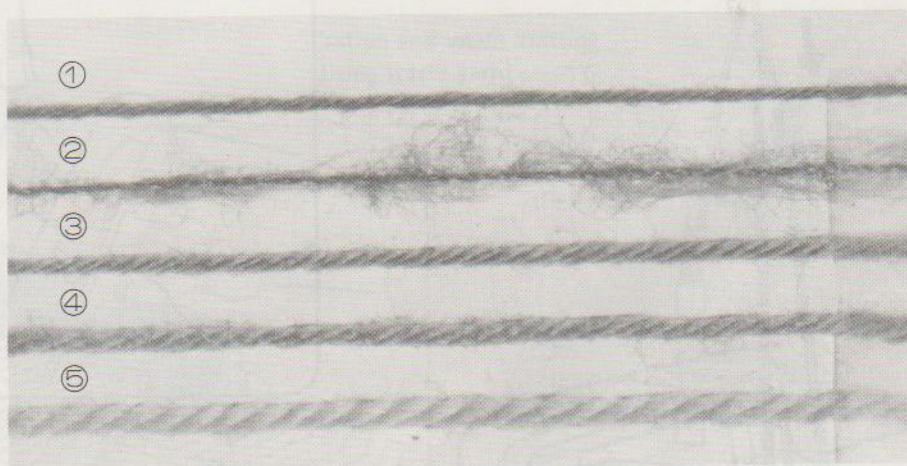
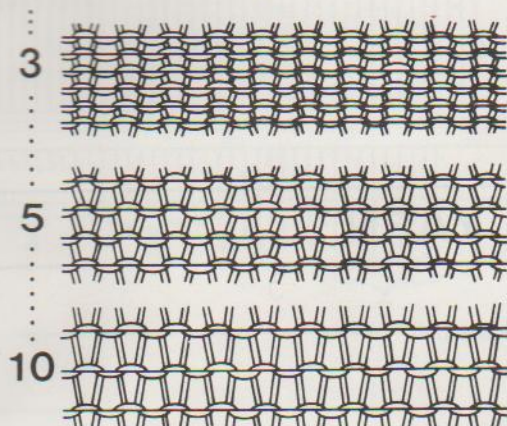


How to set the Carriage on the Needle Bed

First fit the Presser "A" to the Needle Bed front edge "B", and then fit the Carriage Slider "C" on the rail "D".

To release the Carriage from the Needle Bed, pull forward the Release Lever "E", and lift the Carriage up.

STITCH DIAL AND STITCH SIZE



The Stitch Dial regulates the size of stitches to suit to the type of yarn for knitting.

Set a selected number of the Dial to ▲ mark at the front.

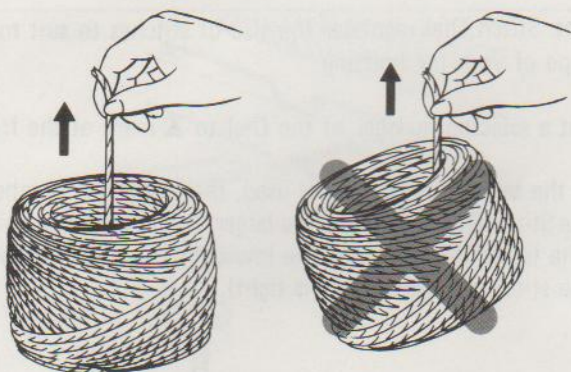
If the same type of yarn is used, the higher the number of the Stitch Dial is selected, the larger the stitch size is knitted (the fabric is loose), and the lower the number, the smaller the stitch size (the fabric is tight).

TYPE OF YARN	STITCH DIAL
① Medium thick	1 - 2
② Mohair	2 - 3
③ Very thick	6 - 8
④ Extra thick	9 - 10
⑤ Super extra thick	10

To obtain suitable stitch size, or suitable tension for a garment, change the setting of the Stitch Dial Number according to the thickness of the yarn, referring to the photograph of yarns in actual size and the table opposite.

The thicker the yarn, the higher the Stitch Dial Number must be selected, and the thinner the yarn, the lower the Stitch Dial Number.

YARN PREPARATION



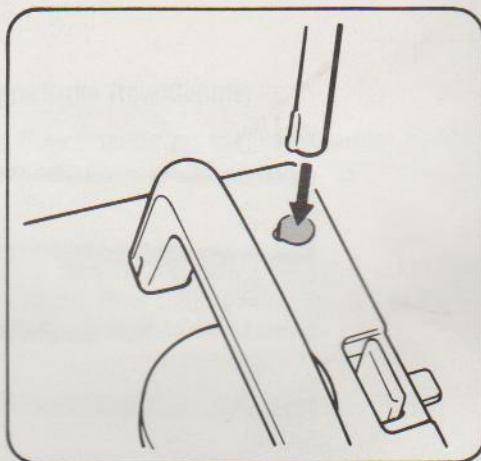
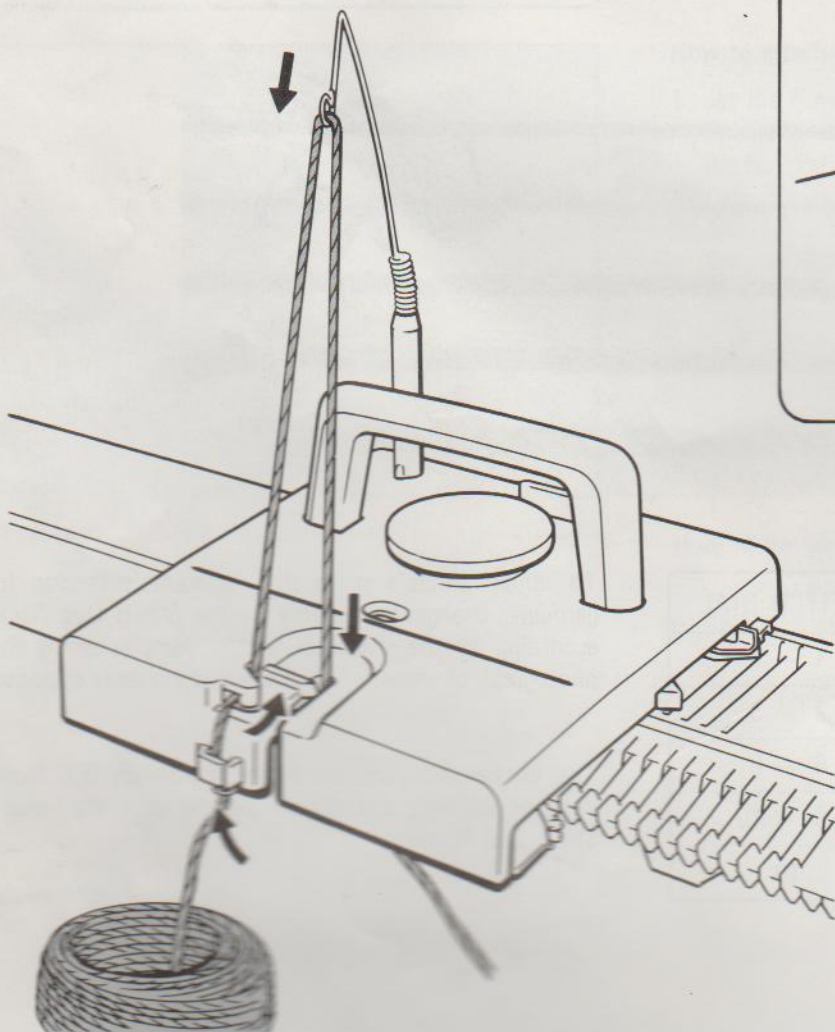
It is recommended to unwind a certain amount of yarn from the yarn ball before starting to knit.

When yarn is rewound, ensure that the yarn end comes out freely without lifting the ball.

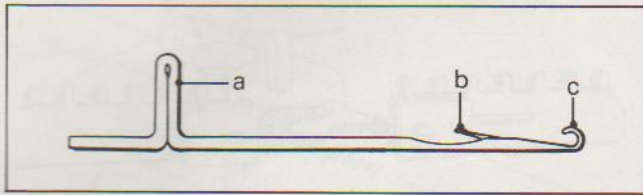
THREADING THE YARN

Place the yarn ball on the floor and pick the yarn end from the centre of the ball.

Guide the yarn through the Carriage as shown below.



NEEDLE BED AND NEEDLES

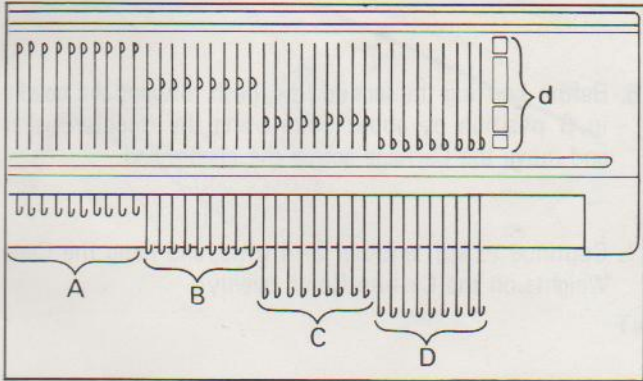


Latch Needle

On the Needle Bed, 120 needles are given.

Each needle has following functional parts.

a — butt b — latch c — hook



Needle Positions

At both sides of the needle bed, the letters, A, B, C, D, are marked which denote the needle aligning ranges.

Align the butt of the needle at the □ mark "d", and each position is used as follows:

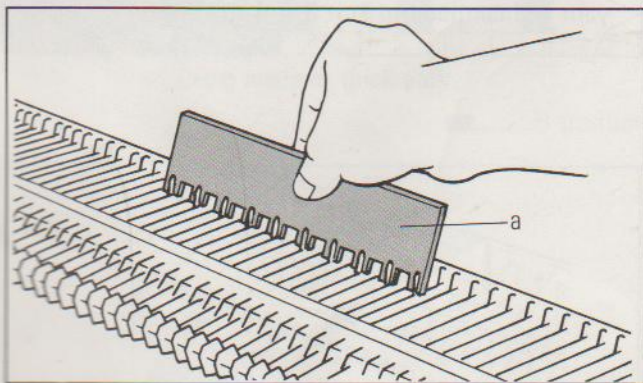
A..... non-working position

B, C..... knitting positions

D..... Holding position

CAST-ON AND KNITTING

Cast-on and waste knitting (Using waste yarn)

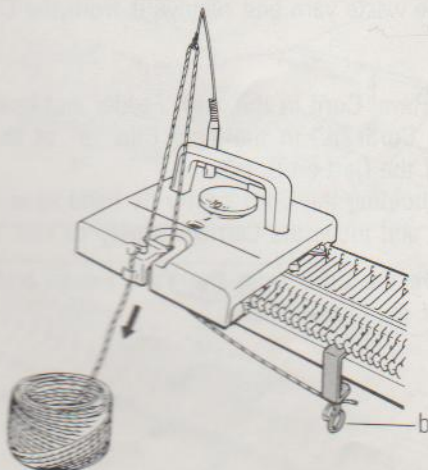


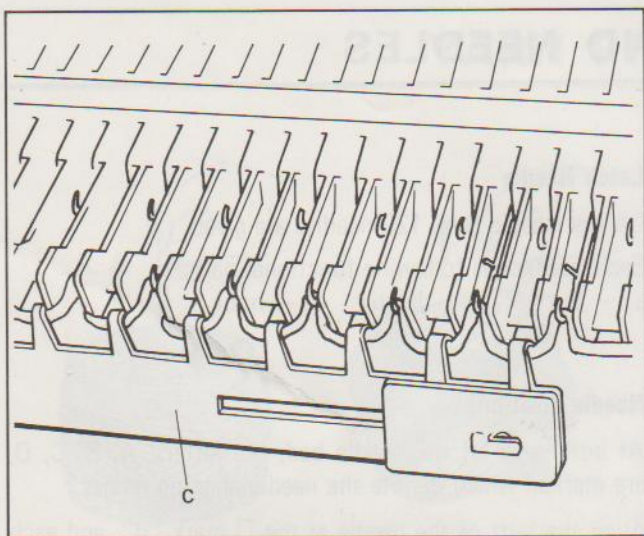
1. Using the 1/1 edge of the Needle Pusher "a", push up every other needles into B position from A position for the width of knitting.

2. Thread a waste yarn through the Carriage and into the Yarn Feeder as shown on page 4.

3. Tie the yarn end to the Clamp screw grip "b".

4. Set the Stitch Dial at ⑩, move the Carriage slowly across the needles till it passes over the end knitting needle.



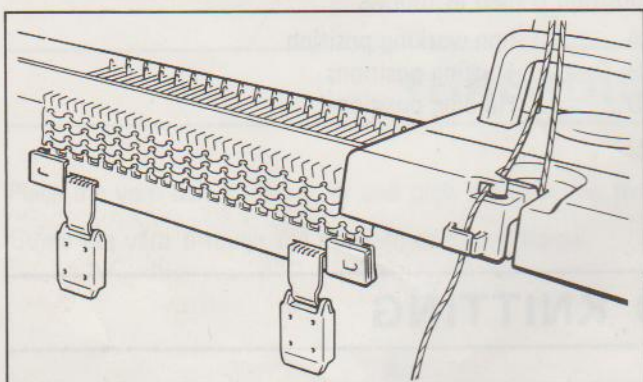


5. Hook the Cast-on Comb "c" on the loops as shown.

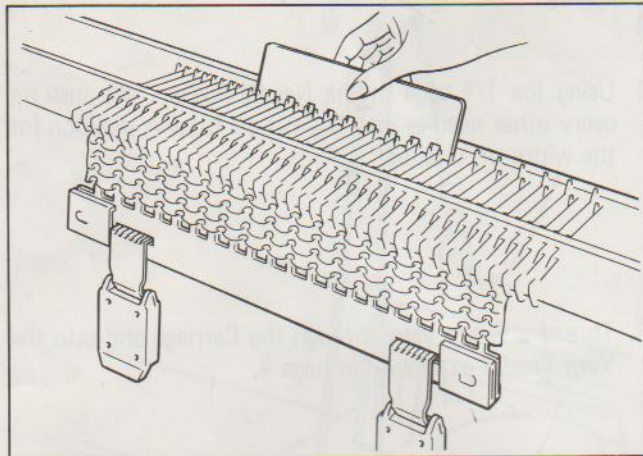
*Connect the Cast-on Combs with the Comb Connectors according to the width of your knitting.



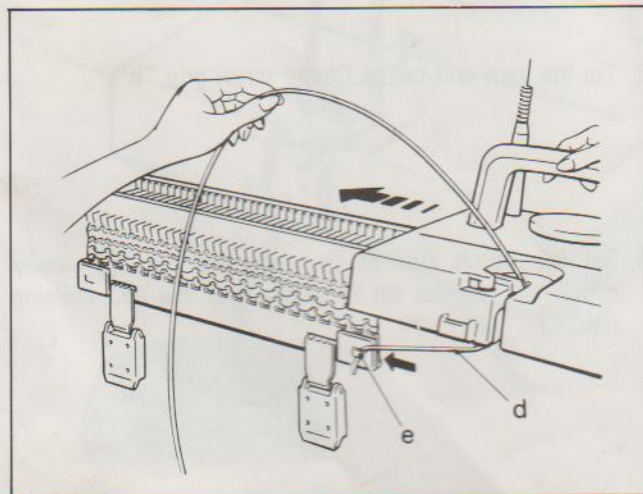
6. Before knitting the second row, push forward the needle in B position by about 5mm using the Needle Pusher and move the Carriage across the needle bed.



7. Continue to knit another 3–4 rows, and hang the Claw Weights on the Cast-on Comb evenly.



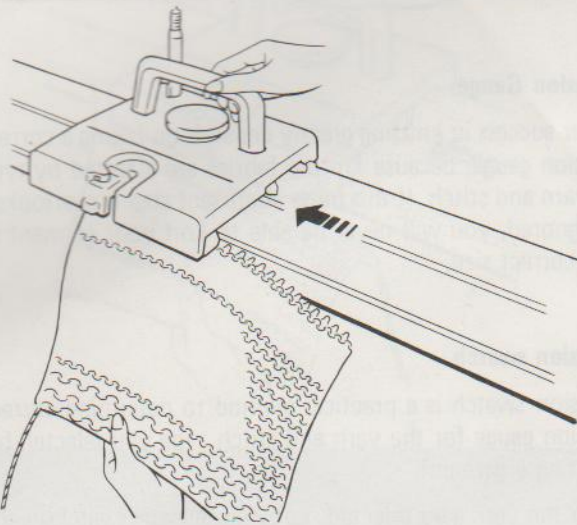
8. Push the needles left in A position into B position. Set the Stitch Dial to match the thickness of the main yarn and continue to knit 3 – 4 rows.



9. Cut the waste yarn and remove it from the Carriage.

10. Set a Ravel Cord in the Yarn Feeder and hook the end of the Cord "d" in the Yarn Clip "e" at the Carriage side of the Cast-on Comb. While holding the Cord lightly by hand so as it runs out freely, and move the Carriage slowly to knit 1 row. Remove the Cord from the Yarn Feeder and the Yarn Clip of the Cast-on Comb.

Main knitting



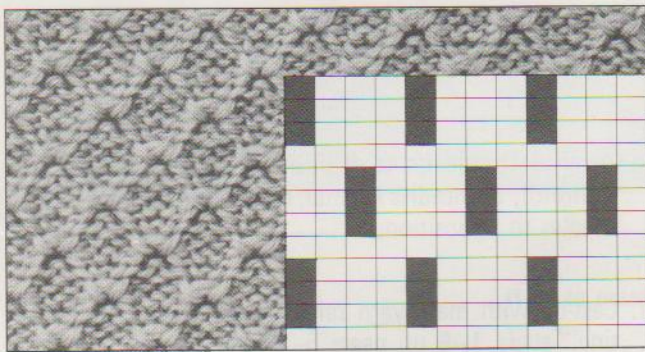
1. Thread the main yarn through the Carriage, and hook the yarn end in the Yarn Clip.
2. Knit required number of rows.
Move the Cast-on Comb with Claw Weights up after you have knitted about 10 rows.

After the main knitting has been completed, knit 5 – 6 rows with a contrast waste yarn.

Remove the Claw Weights and Cast-on Comb from the fabric.

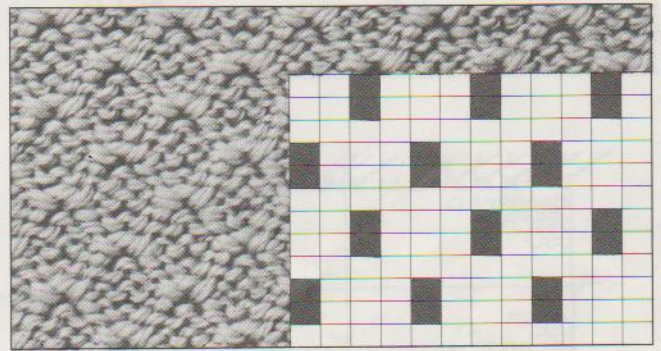
Remove the waste yarn from the Yarn Feeder and move the Carriage once across the Needle Bed, the fabric will drop from the needles.

Tuck Stitch



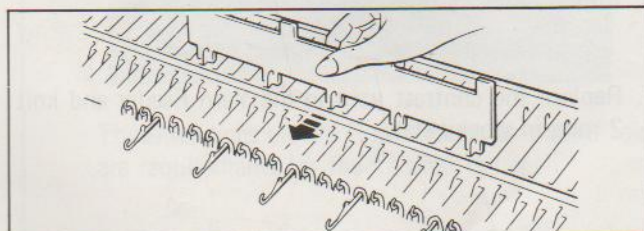
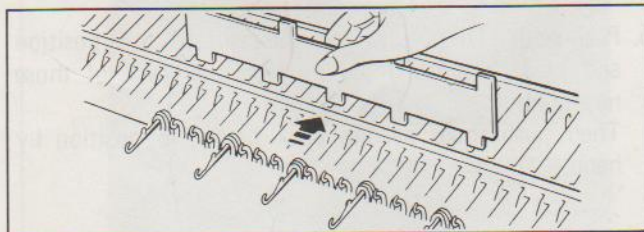
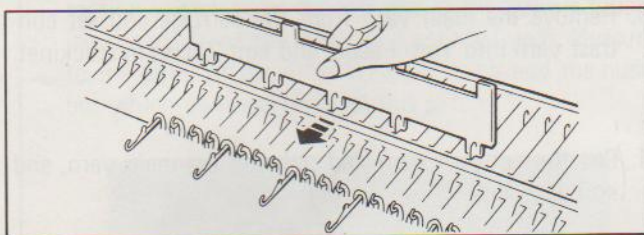
Using medium thick yarn.

■.....D position



Using extra thick yarn.

□.....B position



1. Work in the same manner as done for "Cast-on and waste knitting" 1 – 10.
Knit 1 row with main yarn.
2. Push up every fourth needle to D position from B position using 1/3 Needle Pusher starting from the left end needle.
3. *Medium thick yarn: Knit three rows.
*Extra thick yarn: Knit two rows.
4. Push back the needles in D position to C position using Needle Pusher, and knit 1 row.
5. Counting from the left end needle, push up third needle and every fourth needle to D position, and repeat steps 3 – 4.
6. Repeat steps 2 – 5.

If the needle arrangement is reversed: 3 needles into C position, 1 needle in B position, and knitted with the Passing Levers pulled toward you, Slip Stitch pattern can be knitted.

TAKING A TENSION GAUGE



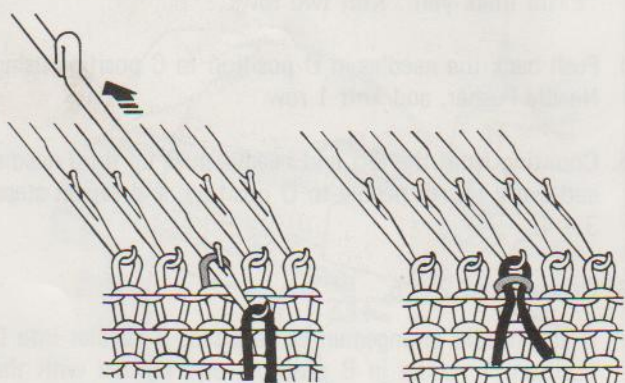
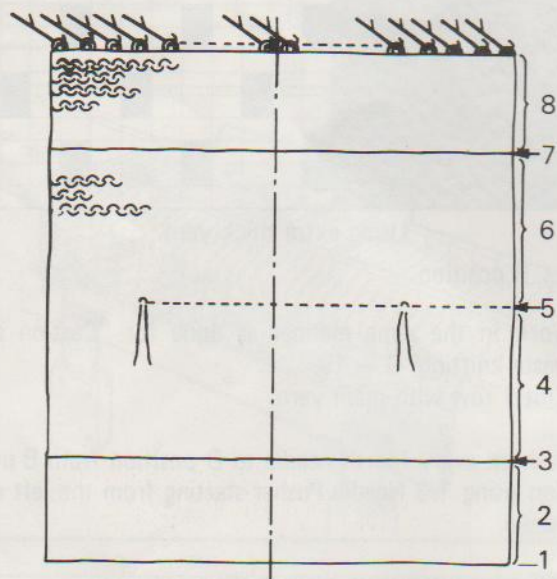
Tension Gauge

Your success in knitting greatly depends on taking a correct tension gauge, because knitted fabrics are affected by type of yarn and stitch. If this most important step is overlooked or ignored, you will never be able to knit your garment to the correct size.

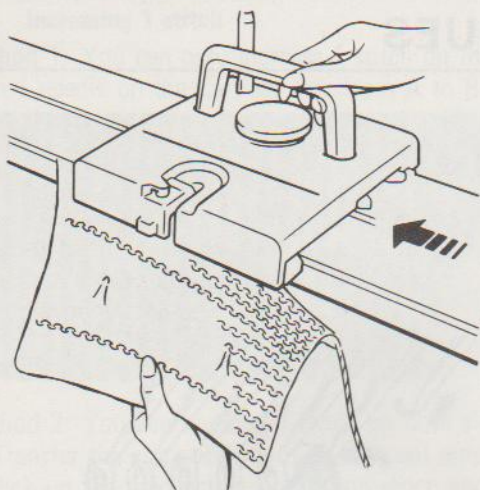
Tension swatch

Tension swatch is a practical method to determine correct tension gauge for the yarn and stitch type you selected for knitting a garment.

With the yarn you selected, knit the tension swatch in the predetermined manner as described below.



1. Arrange 15 needles to B position on both sides of the centre(0), 30 needles in total, and push back every other needles to A position.
2. Cast-on with main yarn referring to "Cast-on and knitting" steps 1-8 on pages 5-6, and knit 5 rows Continuously with suitable Stitch Dial.
3. Remove the main yarn from the carriage and set contrast yarn into Yarn Feeder and knit 2 rows in stockinet.
4. Cut the contrast yarn and rethread the main yarn, and knit 15 rows.
5. Push both 11th needles from the centre(0) to D position and place a piece of contrast yarn in each of those needle hook.
Then push those needles back toward B position by hand.
6. Knit another 15 rows.
7. Replace the contrast yarn in the Yarn Feeder and knit 2 rows in stockinet.



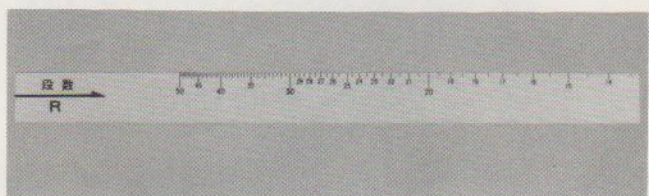
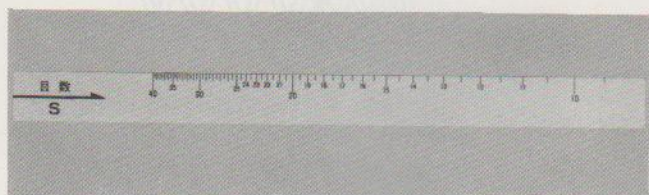
8. Replace the main yarn with the contrast yarn, and knit 10 rows.

Remove the swatch from the machine.

TAKE NOTE OF THE STITCH DIAL NUMBER

9. Allow several hours for the swatch to return to its natural condition.

Press the swatch lightly with a steam iron, or with an ordinary iron over a damp cloth.



Gauge Scale

This scale is so designed as to measure the length of 30 rows and the width of 20 stitches of the tension swatch, and designate them as so many stitches and rows per 10cm.

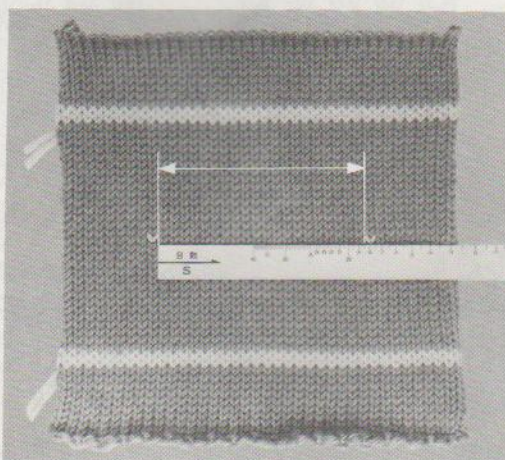
The scale is two sided. The side "S" is used for measuring stitches and the side "R" is for rows.

The photographs below show how the Gauge Scale is used.

How to measure the tension swatch

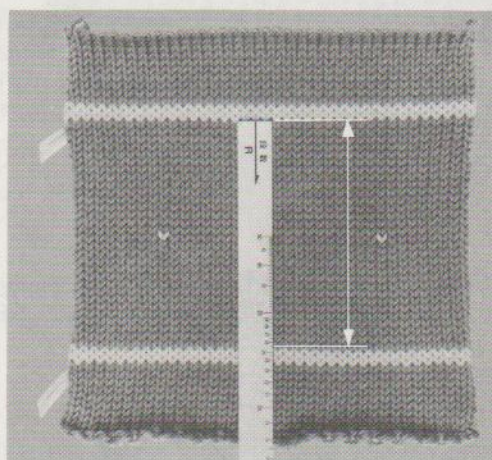
Stitch (Horizontal)

Place the Gauge Scale, with the "S" side up, onto the tension swatch so as the left end of the Scale is touching the inside of the stitch in a contrast yarn. Measure to the point of the other contrast stitch and the number which corresponds with this stitch.



Row (Vertical)

Place the Gauge Scale, with the "R" side up, onto the tension swatch so as it covers the length in between the rows knitted in a contrast yarn. Measure this length and the number indicated on the Scale.



Those readings on the Gauge Scale, on the "S" side for number of stitches and "R" side for number of rows, are requirements for the Tension Gauge.

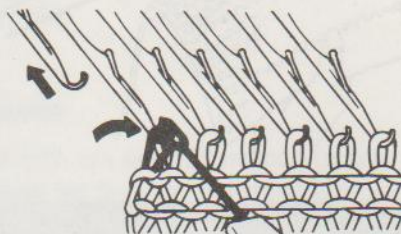
BASIC TECHNIQUES

I Decreasing 1 stitch

You can decrease 1 stitch on both sides of the row.

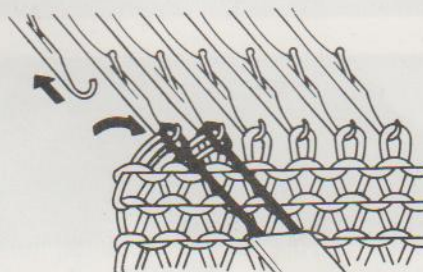
Method 1:

Using the Transfer Tool, transfer the end stitch onto its adjacent needle. Push back the empty needle to A position.



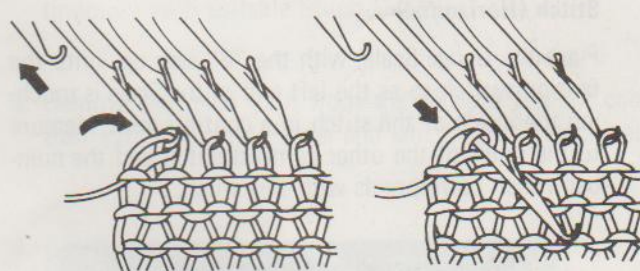
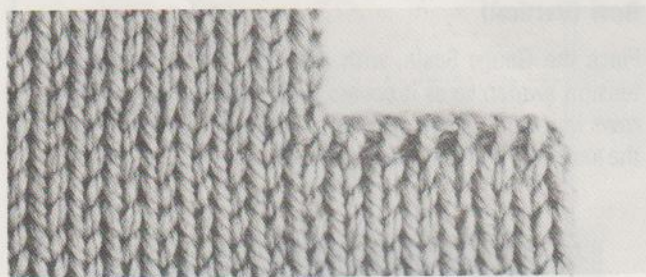
Method 2:

Transfer the end 2 stitches at the same time to adjacent needles respectively. Push back the empty needle to A position.

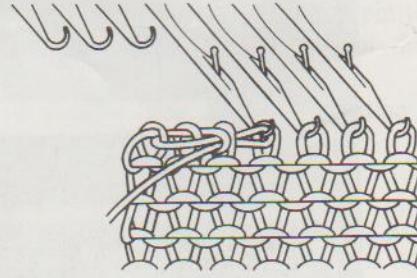
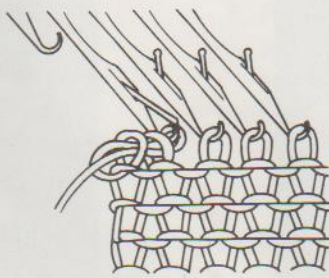
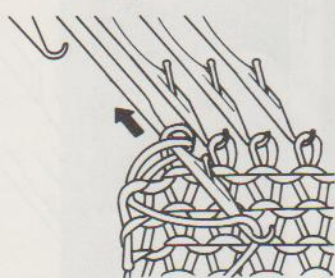


II Decreasing multiple stitches

You can only decrease on the Carriage side.



On the Carriage side, holding the fabric towards the knitter, Transfer the end stitch to the adjacent needle and push up the needle to D position.



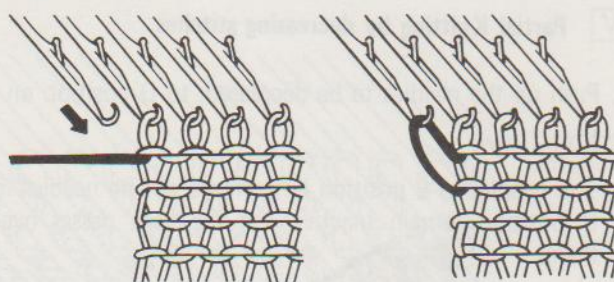
Push the empty needle to A position, lay the yarn across the open hook of the needle from the outside toward inside.

Hold yarn slightly down and push the needle back to B position. The two stitches slip off the needle.

Continue this procedure until the required number of stitches have been decreased. Place the last decreased stitch onto its adjacent needle.

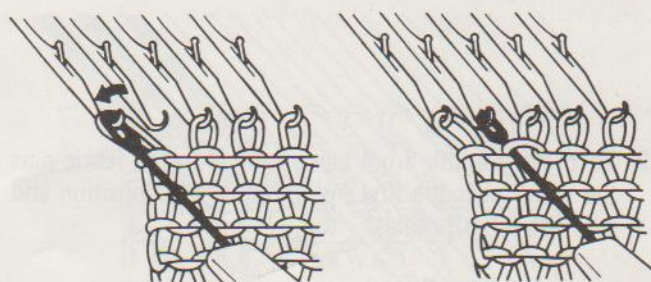
III Increasing 1 stitch

Method 1: You can only increase 1 stitch on the Carriage side.
Push 1 needle on the Carriage side from A to B position and knit 1 row.

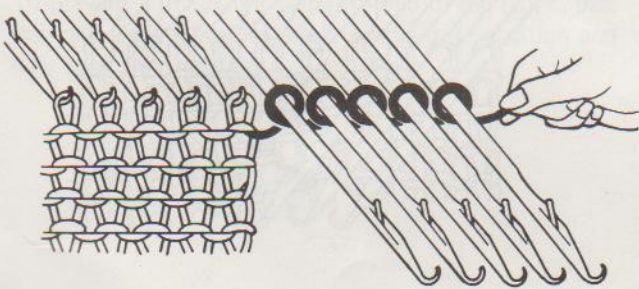
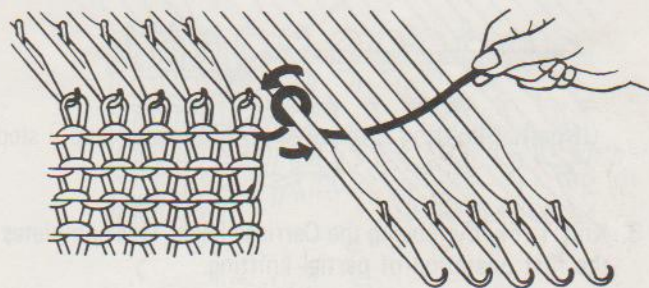
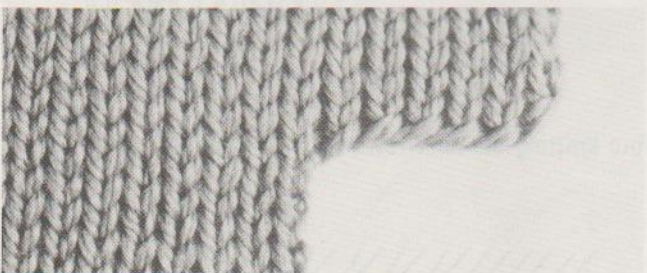


Method 2: You can increase 1 stitch on both sides of the row.

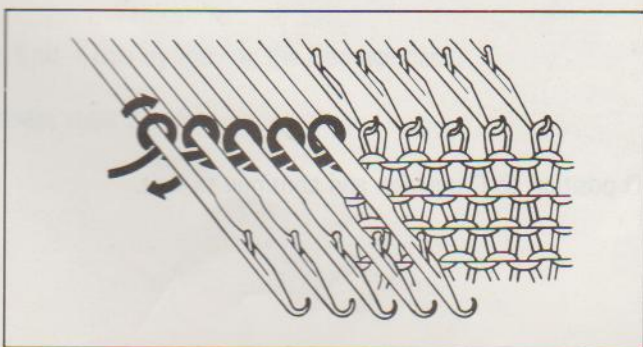
- Transfer the end stitch onto its adjacent empty needle.
- Pick up the loop below the second stitch and place it on the empty needle.



IV Increasing multiple stitches



- Pull some yarn from the Yarn Feeder.
- Push the required number of needles from A to D position.
- Push loops against sinker posts.
- Push back the needle in D position to C position.
- Take up slack on yarn and continue knitting.



* When the Carriage is on the left side, wind yarn around the needle in the clockwise direction.

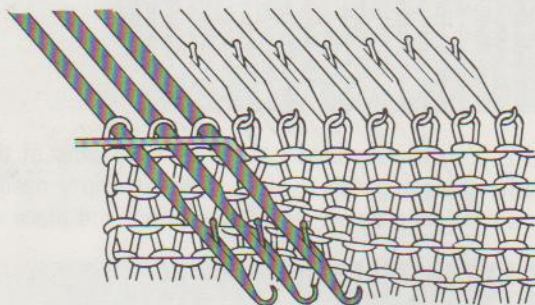
PARTIAL KNITTING is a practical method for shaping a gentle slope, such as a shoulder, bust darts and so on.

V Partial Knitting by decreasing stitches

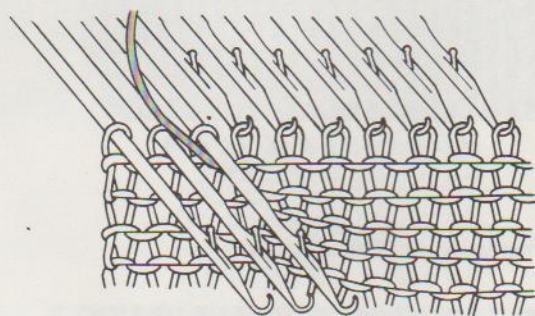
1. Push up the needles to be decreased, to D position on the opposite side of the Carriage.

Knit 1 row.

The needles in B position knit the yarn. The needles in D position remain inactive and the yarn passes over them.

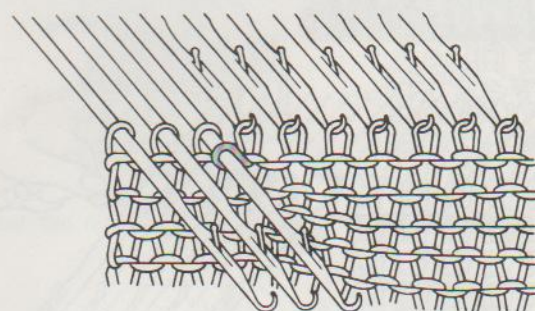


2. To prevent a hole from being formed in the fabric pass the yarn under the first inside needle in D position and over the other needles.



(If partial knitting is required on both sides, apply step 1 before knitting the next row.)

3. Knit 1 row by moving the Carriage back. This completes the first operation of partial knitting.



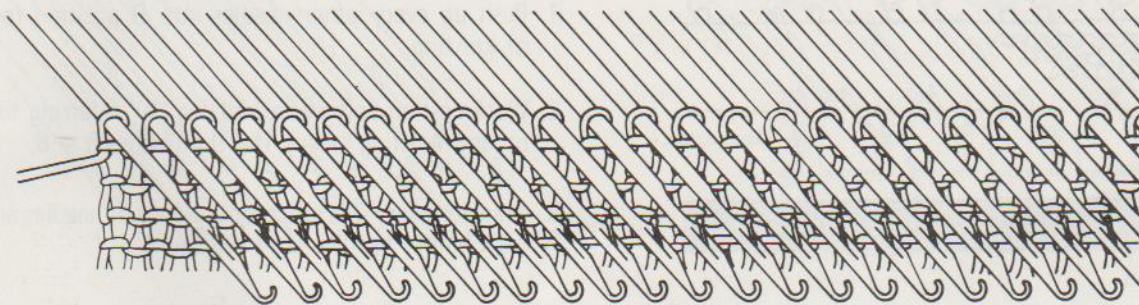
(If partial knitting is required on both sides, apply step 2.)

Repeat steps 1 – 3.

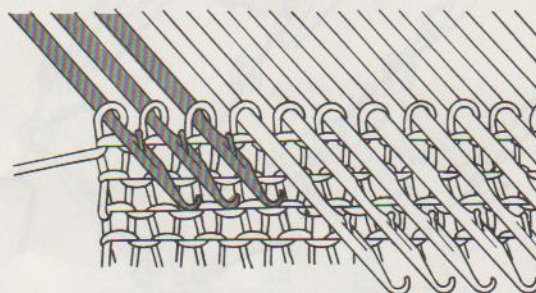
When the partial knitting is completed, push back the needles in D position to C position and continue to knit.

VI Partial Knitting by increasing stitches

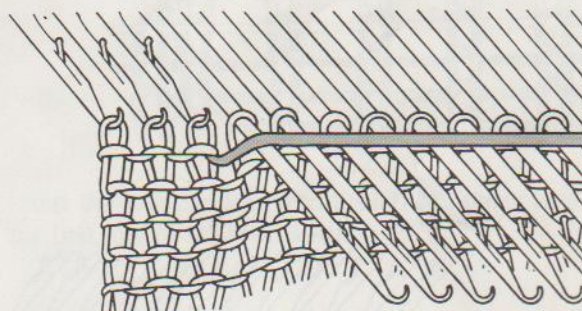
1. Push up all needles to D position.



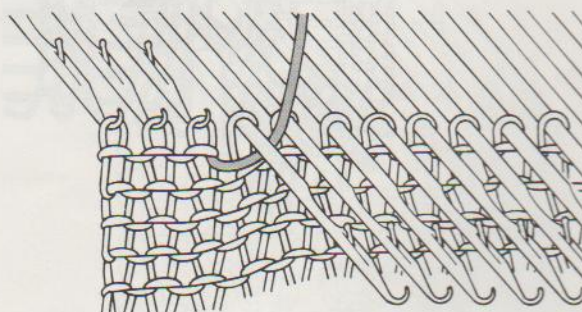
2. On the Carriage side, push the needles to be increased back to C position.



3. Knit 1 row.

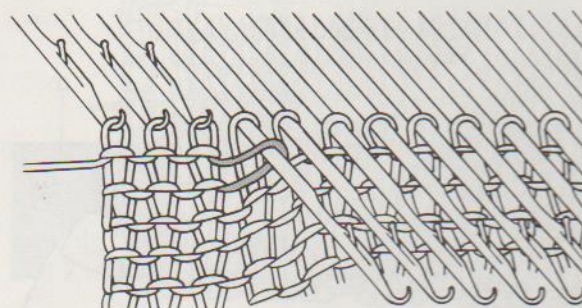


4. To prevent a hole from being formed in the fabric, pass the yarn under the first inside needle in D position and over the other needles.

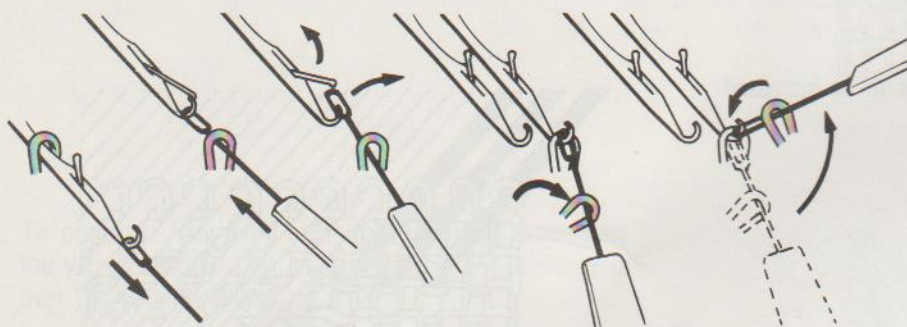
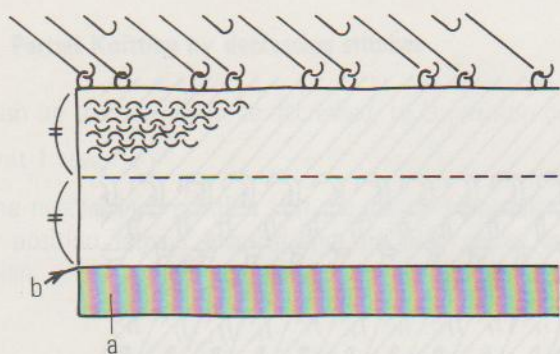


5. Knit 1 row by moving the Carriage back.

Repeat steps 2 – 5.

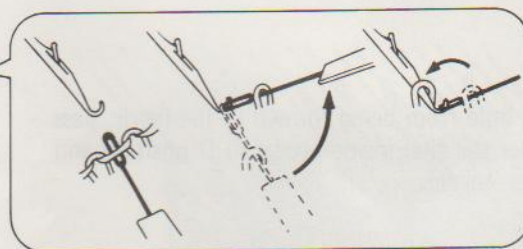
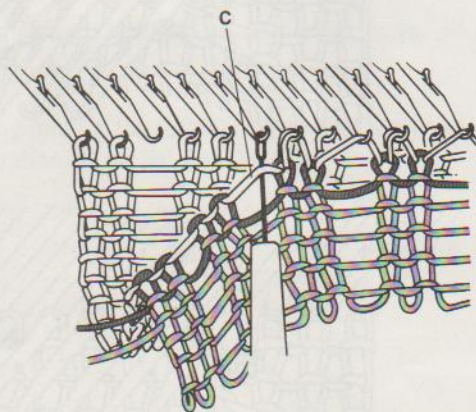


VII Mock rib

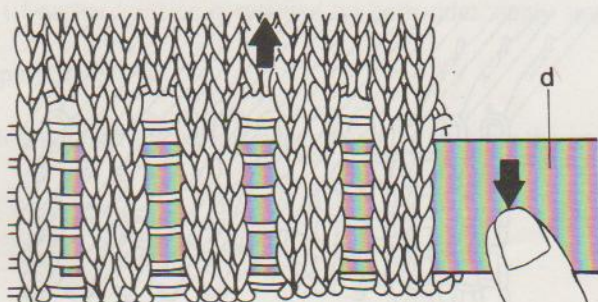


This used for Waistbands, hems, cuffs, neckbands.

1. Push up every other needles into B position for width of knitting.
2. Work cast-on and waste knitting "a" referring to "Cast-on and knitting" steps 1 – 9 on pages 5 = 6.
3. Transfer every 3rd stitch onto adjacent needles and push back empty needles to A position.



4. Set a Ravel Cord "b" in the Yarn Feeder and knit 1 row. Remove the Ravel Cord from the Yarn Feeder.
5. Thread the main yarn through the Carriage and tie the yarn end at the Clamp grip.
6. Set the Stitch Dial 3 number lower than the original number of the tension swatch and knit twice the length of the hem.
7. Return the needles that were pushed back to A position to B position.
8. Insert a one-prong Transfer Tool into the sinker loops of the first row "c" of the main knitting and place them onto the corresponding needles in B position.



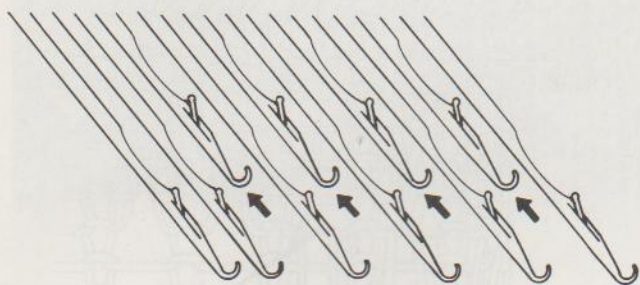
9. Reset the Stitch Dial to the original number of the tension swatch and continue to knit.

* If the Ravel Cord is pulled out, the waste knitting comes off.

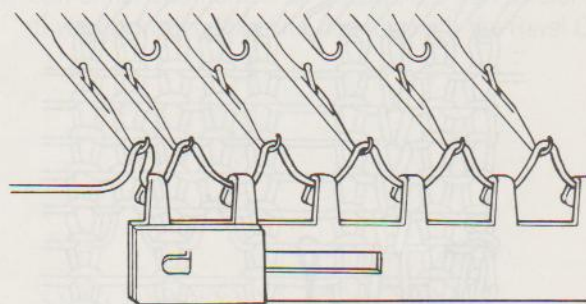
When ironing, insert a ruler-like object "d" into the side opening of the ribbed knitting and stretch the fabric vertically.

VIII K1.P1. Rib

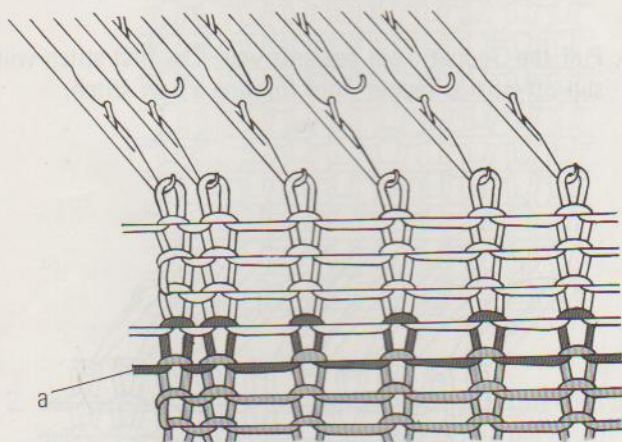
This is used for waistbands, neckbands, cuffs, etc.



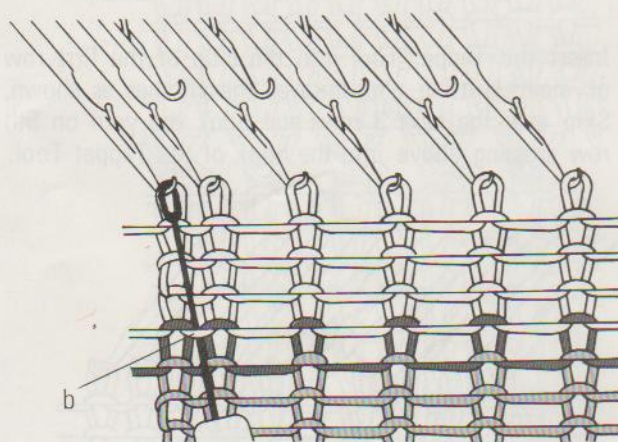
1. Push up the required number of needles to B position and push back every other needle to A position starting from the third needle from the left side.



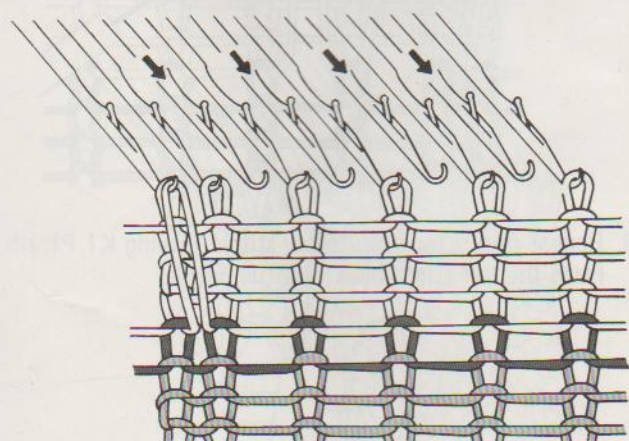
2. Knit 1 row with waste yarn and hang Cast-on Comb as shown.
Knit several rows of waste knitting.



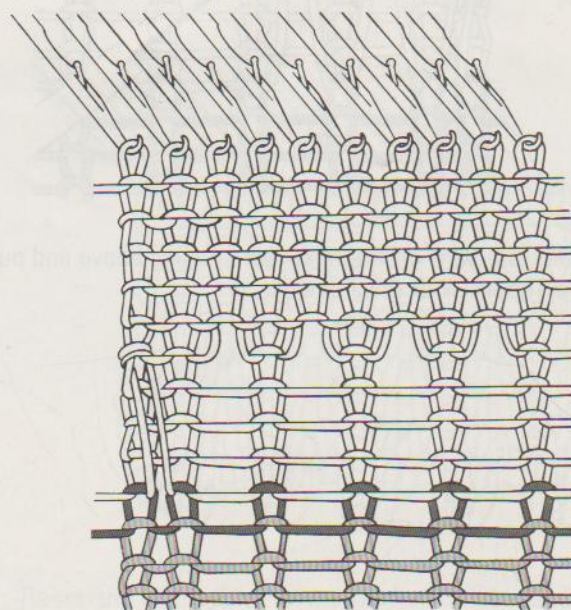
3. Hang Claw Weights evenly and knit 1 row with Ravel Cord "a".
Thread the main yarn and knit 4 rows with Stitch Dial at 0.



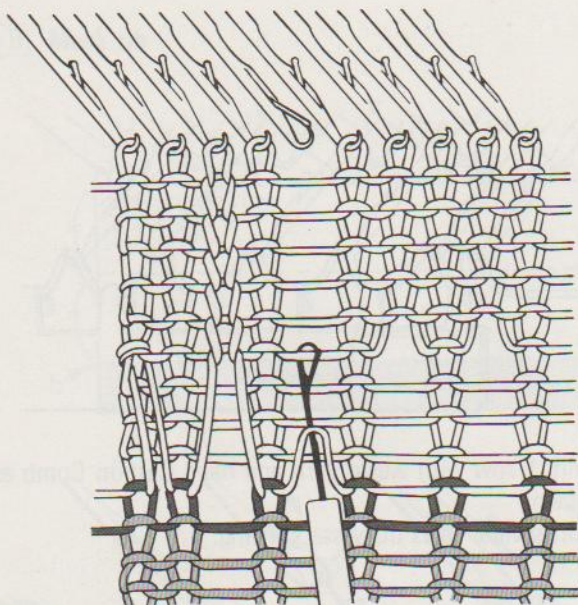
4. Insert the Transfer Tool into the left end sinker loop on the first row of the main knitting "b".



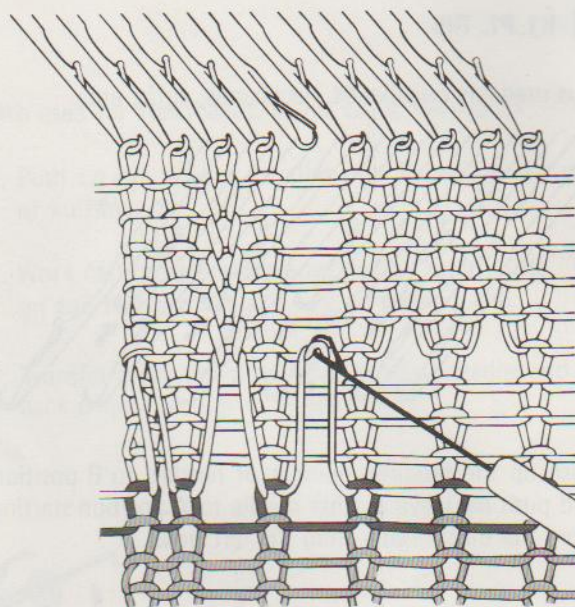
5. Place the loop onto the end needle. Push those needles that were pushed back to A position in step 1, to B position.



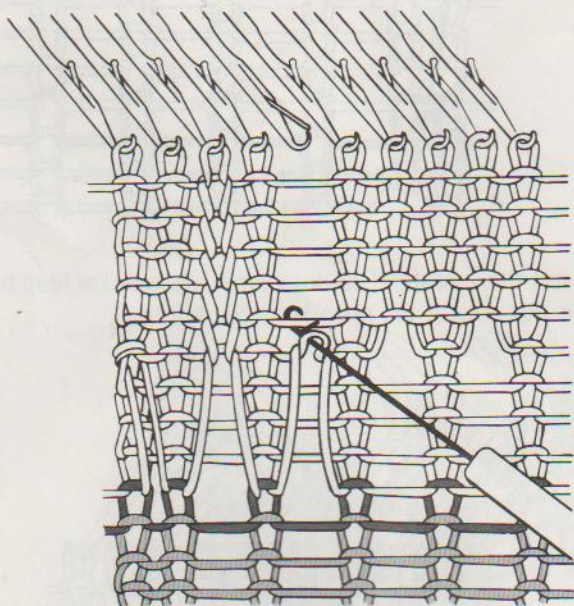
6. Knit the length required for ribbing with the Stitch Dial 2 number lower than that for stockinet knitting.



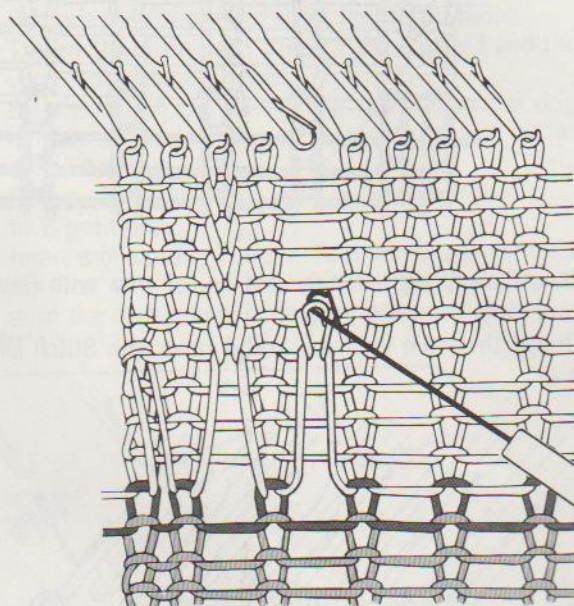
7. Insert the Tappet Tool into the loop of the first row of main knitting and unravel the stitches as shown. Skip over the next 3 rows and hook the yarn on 5th row crossing above into the hook of the Tappet Tool.



8. Pull the Tappet Tool towards you. The first stitch will slip off of the Tappet Tool forming a new stitch.

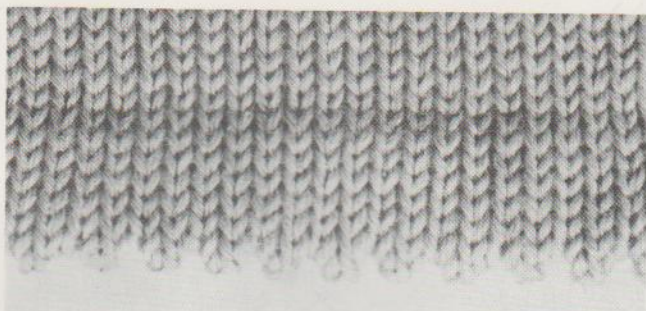


9. Hook the yarn on the next row crossing above and pull the Tappet Tool towards you.

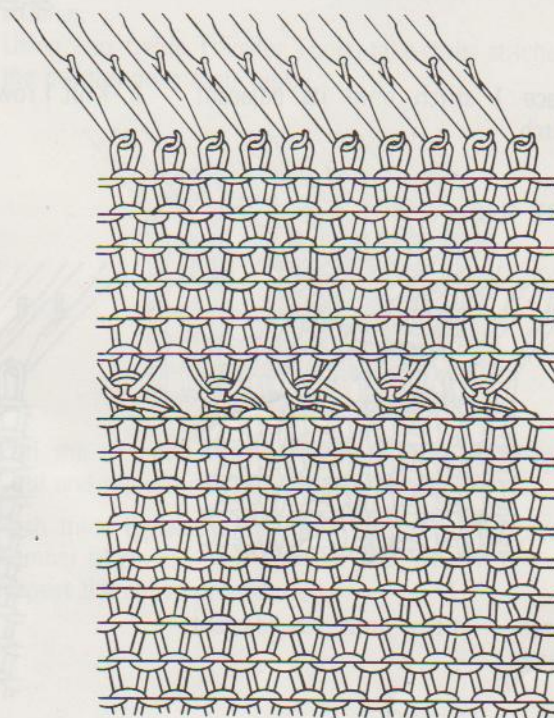
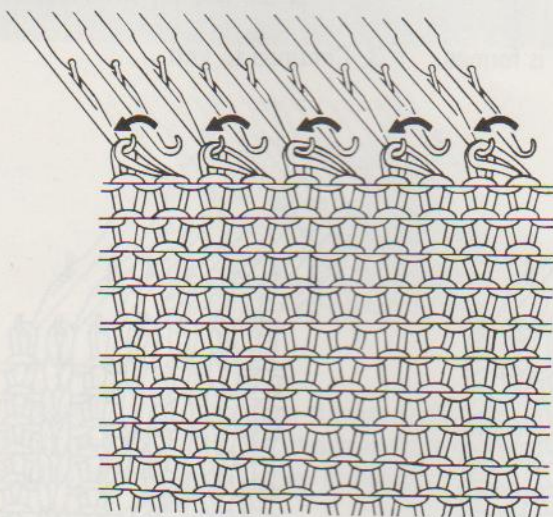


10. Repeat step 9 for every other stitch forming K1.P1. rib. Place the last stitch back onto its needle.

IX Picot Hem



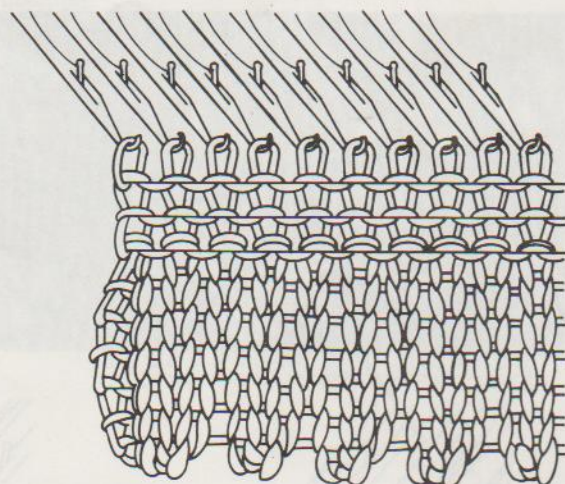
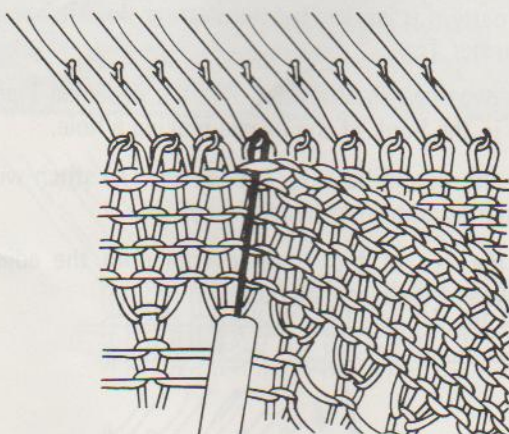
1. Cast-on an odd number of stitches and knit several rows of waste knitting then knit one row with the Ravel Cord.



2. Set the Stitch Dial 1 full number lower and knit with the main yarn as many rows as is required for the length of the hem.

3. Make picot eyelets by transferring every-other stitch onto their adjacent needles and align the empty needles in B position.

4. Reset the Stitch Dial to that originally used for stockinet knitting and knit the same number of rows.

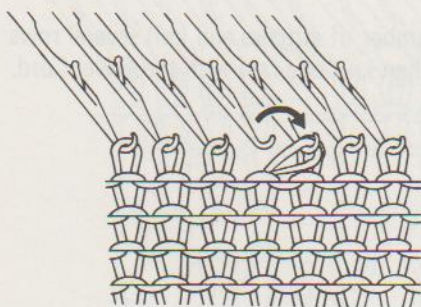


5. Place the sinker loops on the first row of the main knitting onto their corresponding needles.

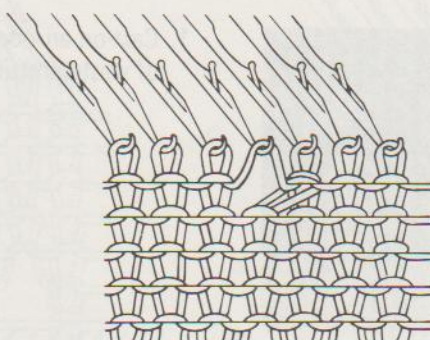
6. Set the Stitch Dial 2 full number higher than the number originally used and knit 1 row.

7. Re-set the Stitch Dial to the original number and continue to knit.
Pull out the Ravel Cord to remove the waste knitting.

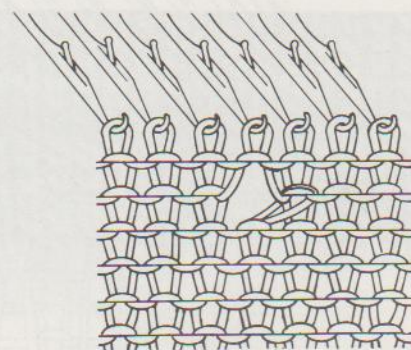
X Buttonhole



1. Place 1 stitch onto its adjacent stitch.

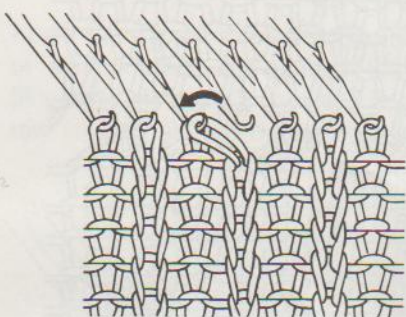


2. Knit 1 row so that a hole is formed.

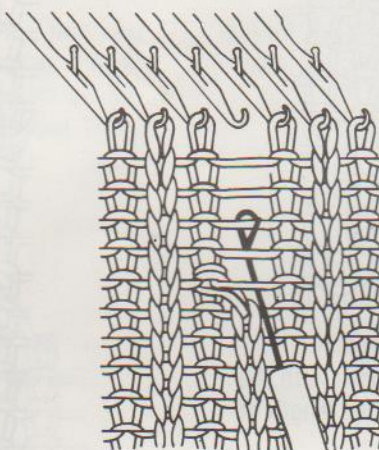


3. Continue to knit.

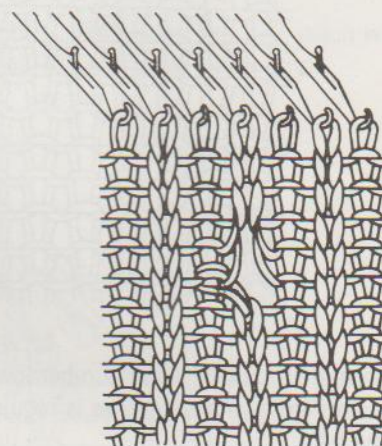
(K1.P1. Rib)



1. Place 1 stitch onto its adjacent stitch.

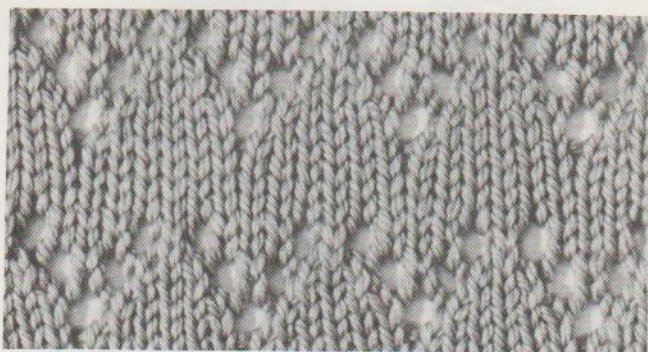


2. With the empty needle in B position, continue to knit.



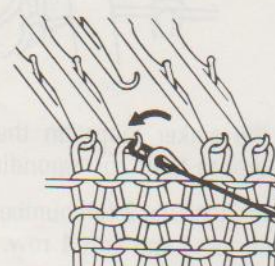
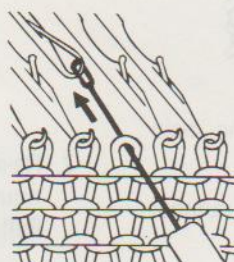
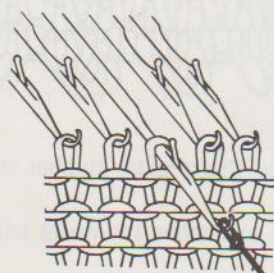
3. Re-form the stitch with the aid of the Tappet Tool.

XI Openwork

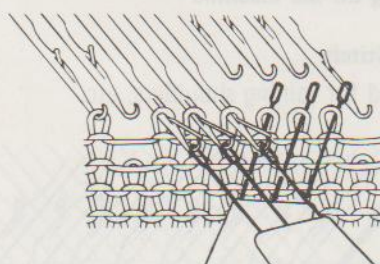
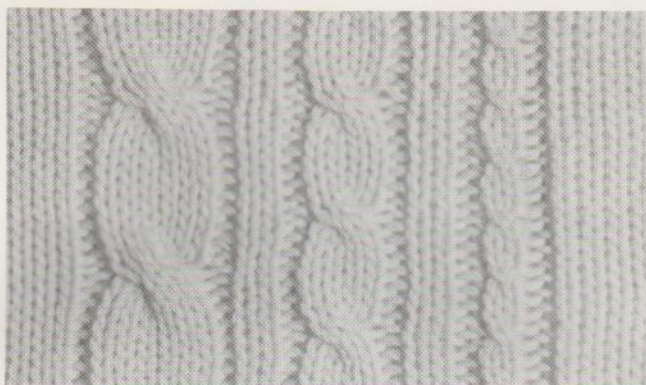


* This pattern is worked by transferring the stitches using a Transfer Tool.

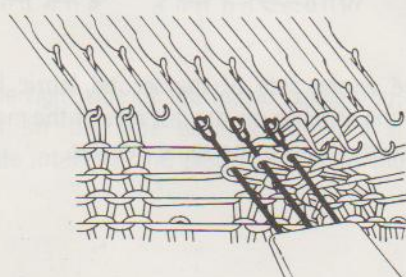
1. Knit two rows in stockinet. Put the eye of a Transfer Tool in the hook of the needle making a hole.
2. Push the needle back to A position. The stitch will be transferred onto the Transfer Tool.
3. Put the eye of the Transfer Tool onto the adjacent needle and transfer the stitch.



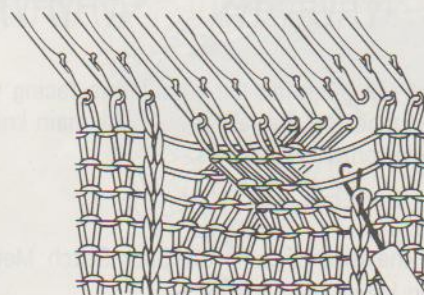
XII Cable Stitch



1. Drop both stitches on the outside of the intended cable stitches.
Using two treble Transfer Tools, take three stitches off the needles onto each tool.



2. Cross and transfer the three stitches at the right onto 3 empty needles at the left, transfer the remaining three stitches to the empty needles at right.

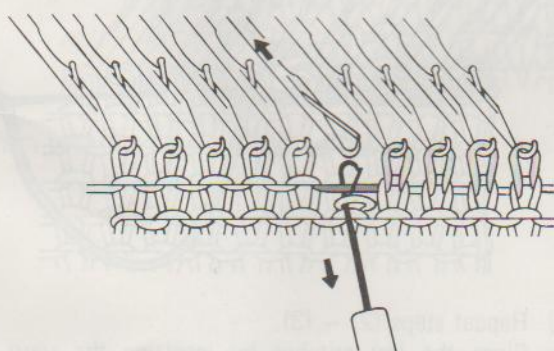


3. Purl the dropped stitches on both sides using Tappet Tool and replace onto the original needles.
4. Push these 6 needles up into C position, knit required number of rows.
5. Repeat the above procedure.

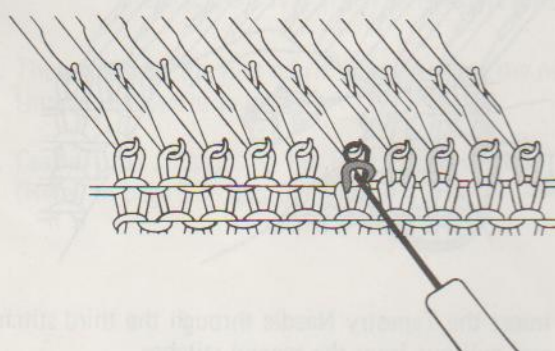
XIII Garter Stitch



1. Set the Stitch Dial 2 number lower than that for stockinnet knitting. Knit 2 rows in stockinnet.
2. Insert the Tappet Tool into the row below that which is hooked on the needle, and push up the needle to D position.



3. Push the needle back to B position and pull the Tappet Tool in the arrowed direction forming a purl stitch.

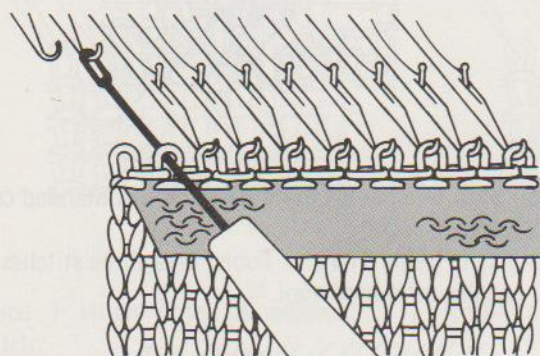


4. Place the newly formed stitch back onto the needle. Repeat steps 2 – 4 for all stitches on the row.
5. Knit further 2 rows of stockinnet and re-form the stitches every second row in the same manner as done in steps 2 – 4.

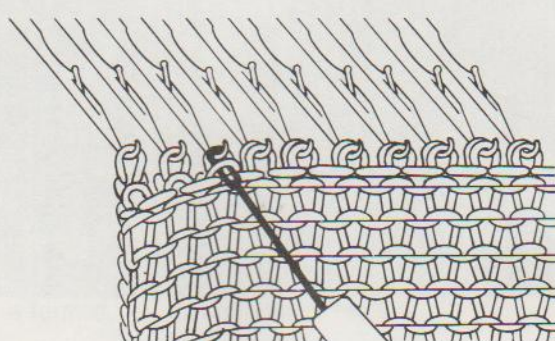
XIV Joining on the machine

1. Stitch to Stitch

This is used for joining shoulders, etc.

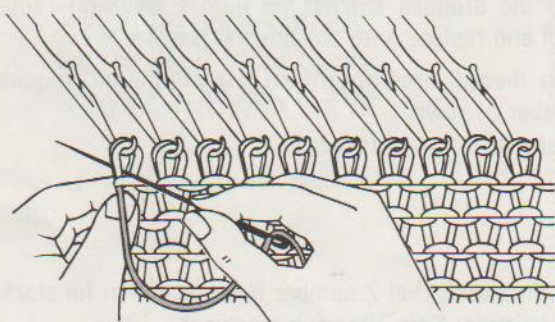


1. With the right side of the first fabric facing you, pick up the stitches on the last row of the main knitting and place them onto the needles.

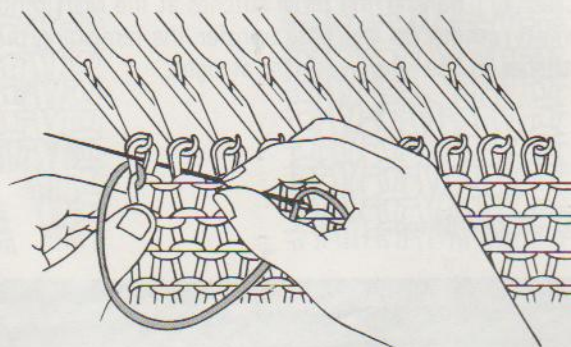


2. With the wrong side of the second fabric facing you, pick up the stitches on the last row of the main knitting and place them onto the same needles.

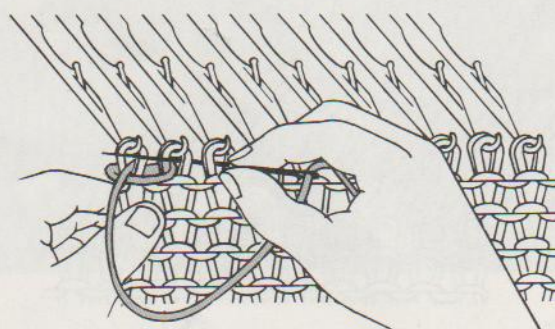
3. Cast off the stitches using the Back Stitch Method, as shown below.



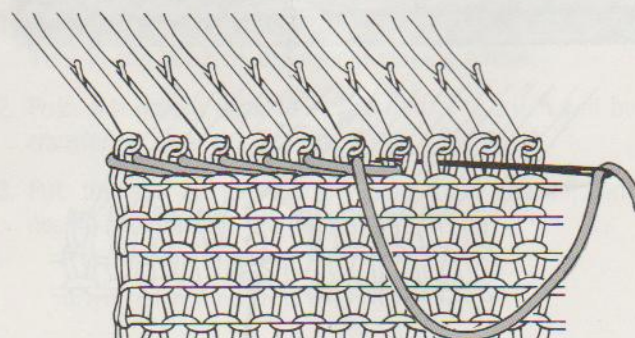
(1) Thread the Tapestry Needle and insert it into the first stitches and pull the yarn.



(2) Insert the Tapestry Needle through the second stitches and pull out from the first stitches.



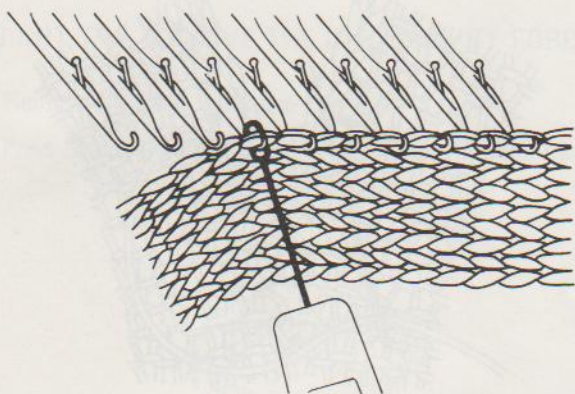
(3) Insert the Tapestry Needle through the third stitches and pull out from the second stitches.



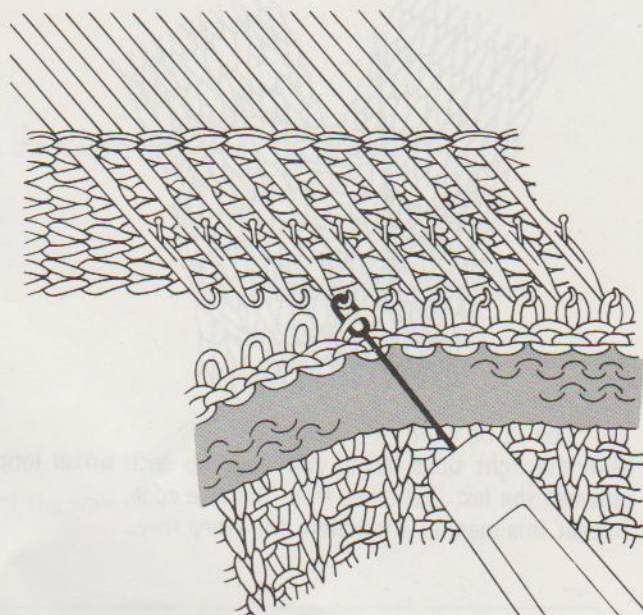
(4) Repeat steps (2) – (3).
Close the last stitches by inserting the yarn and guiding it out of the stitches.

2. Open Stitch to Side Edge.

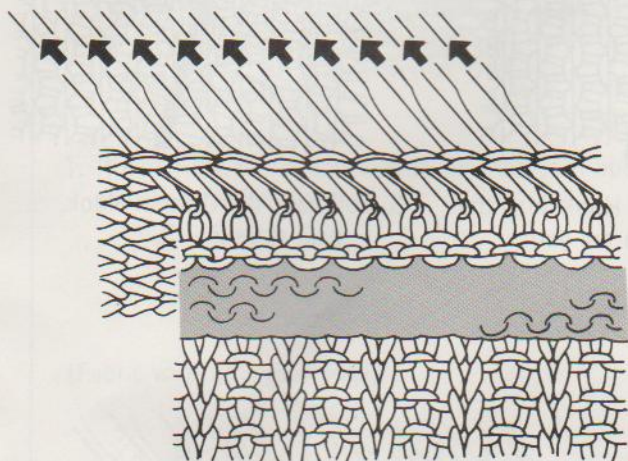
This is used for joining the border to the front open edge of a cardigan.



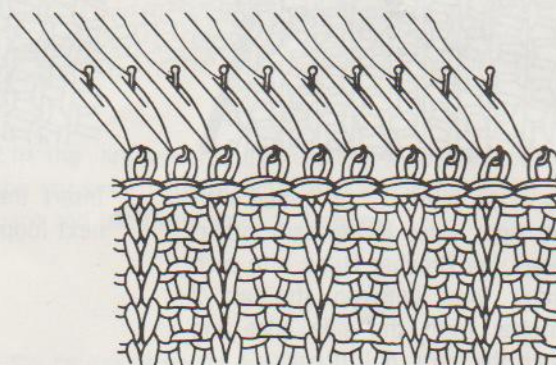
1. With the right side of the fabric facing you, pick up the stitches on the side edge, omitting a stitch at appropriate intervals, and place them onto the needles.



2. Push up the needles to D position. With the wrong side of the second fabric facing you, pick up the stitches on the first row of the main knitting, and place them onto the same needles.



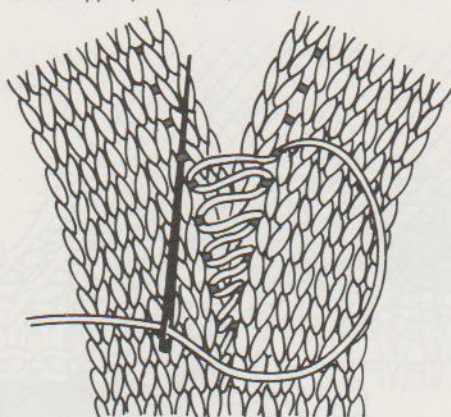
3. Push back the needles to B position.



4. The stitches of the first fabric will slip off of the needles. Unravel the waste knitting.
5. Cast off the stitch using the Back Stitch method. (Refer to page 20, step 3)

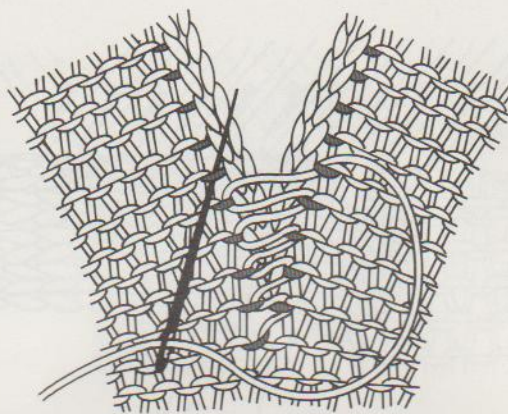
XV Blind Stitch

This is used for joining side seams.
Use medium type yarn for joining.



Knit side to be worn.

With the right sides facing you, pick up each sinker loop between the last 2 stitches from the side edge.
Repeat this manner alternately for every row.



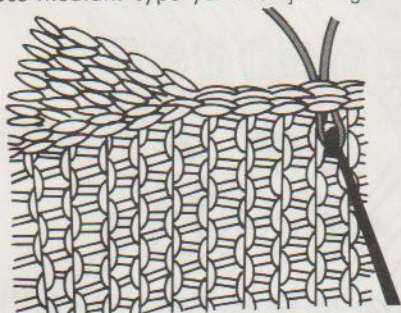
Purl side to be worn.

With the purl sides facing you, pick up the needle loops of the second stitch from the side edge of the first fabric.
On the second fabric, pick up the sinker loops between the last 2 stitches.

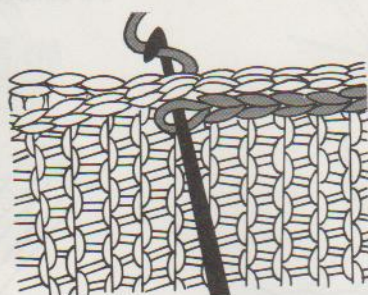
Repeat the above manner alternately for every row.

XVI Slip Stitch

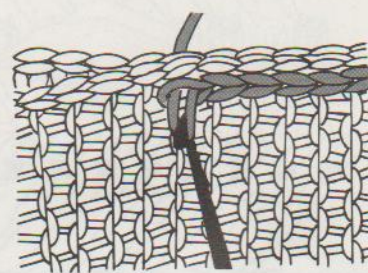
This used for setting in the sleeves or joining side seams.
Use medium type yarn for joining.



1. Place the fabric to be joined with the right sides facing each other. Insert the Crochet Hook into each sinker loop between the last 2 stitches from the side edge and catch the yarn, pull it back.



2. Insert the Crochet Hook into the next loop and catch the yarn.

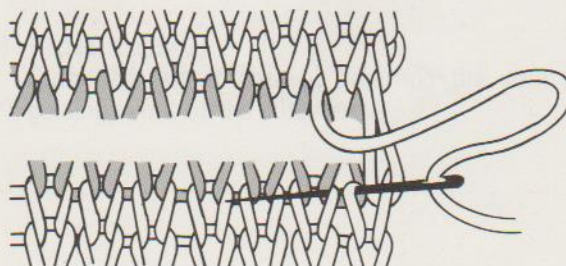


3. Pull back the Crochet Hook. Repeat steps 2 – 3.

XVII Grafting

This is used for joining two open rows, where ridges formed by seaming should be soft to the touch.

Align both fabrics as shown and thread the knitting yarn through the stitches with the Tapestry Needle.

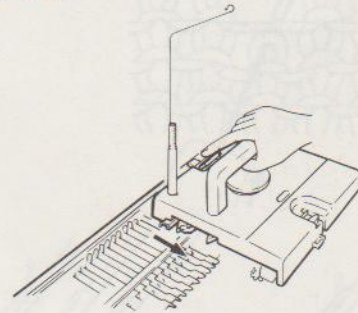
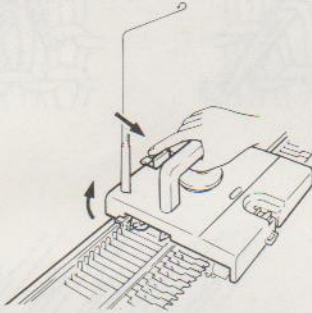


WHAT TO DO IF...

If the Carriage got stuck.....

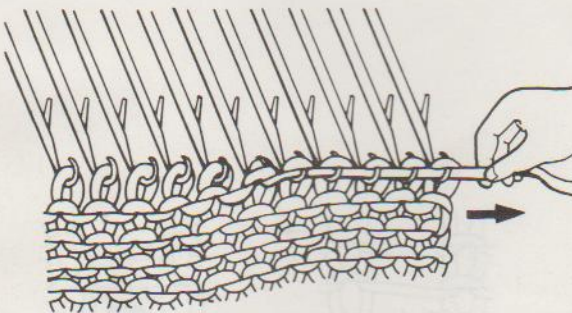
DO NOT TRY TO MOVE THE CARRIAGE BY FORCE

1. Remove the yarn from the Carriage.
2. Press forward the Release Lever, and remove the Carriage from the Needle Bed.

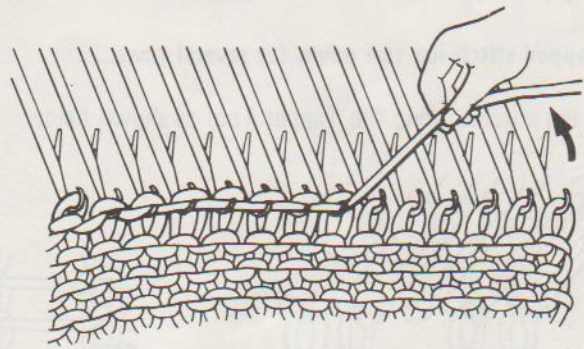


3. Replace the Carriage at either end of the machine, at the end of the row.

— To unravel knitted fabric on the machine —

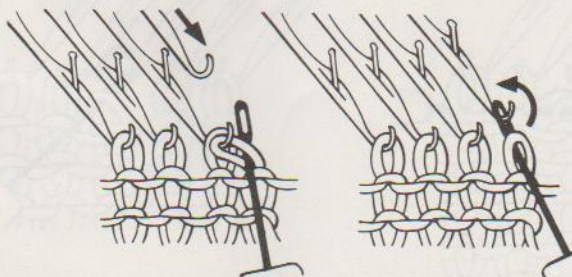


1. Holding the fabric downwards, pull the yarn out, and the row gets tight.



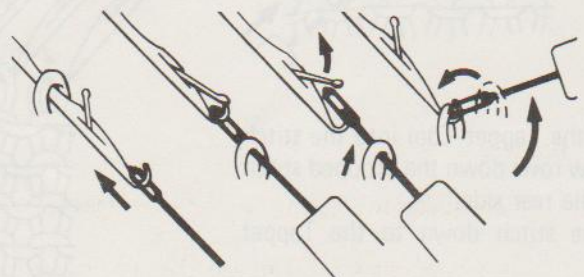
2. Lift the yarn upwards and very slightly backwards, the stitches of the previous row will slide off the yarn and back into the needle hook.

(Fabric with decreased edge)



On the row of decrease, the end needle has two stitches, place one stitch back to its original needle.

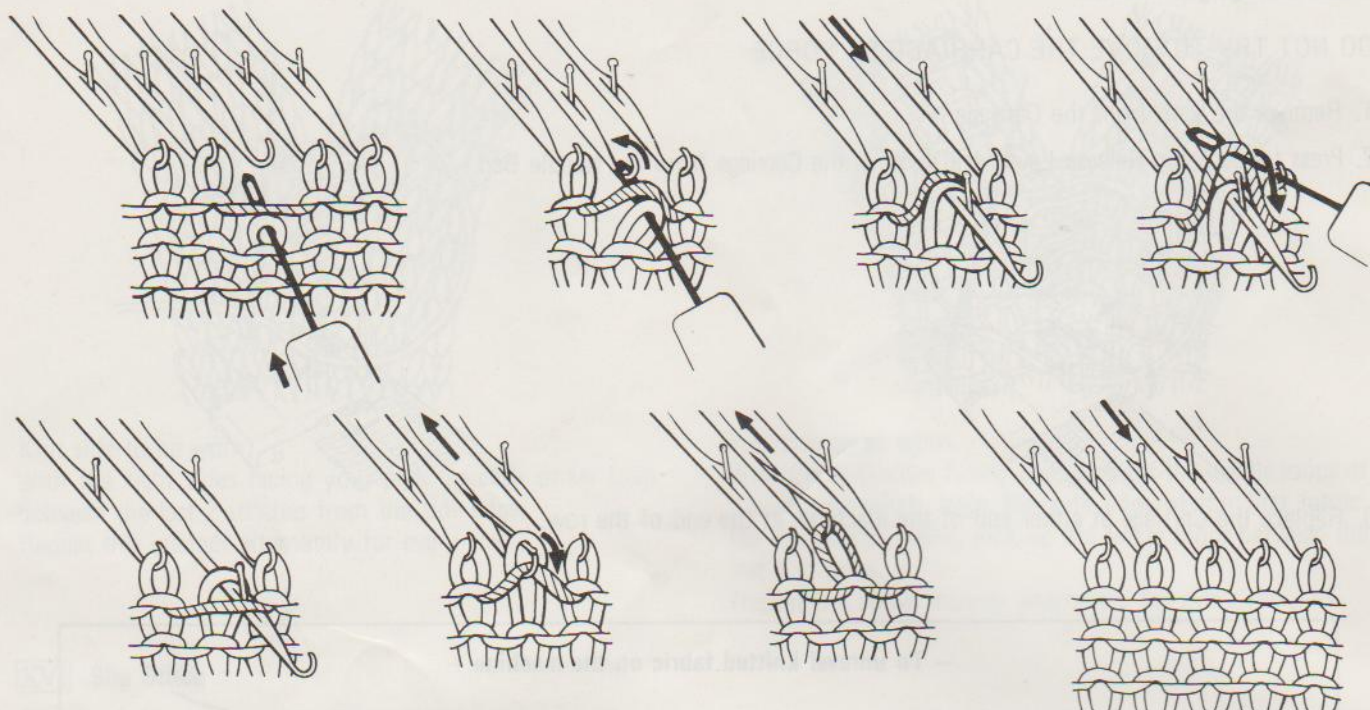
(In the course of partial knitting)



Push the needles, those are in D position in the course of partial knitting, back into B position using the Transfer Tool, before unravelling the row.

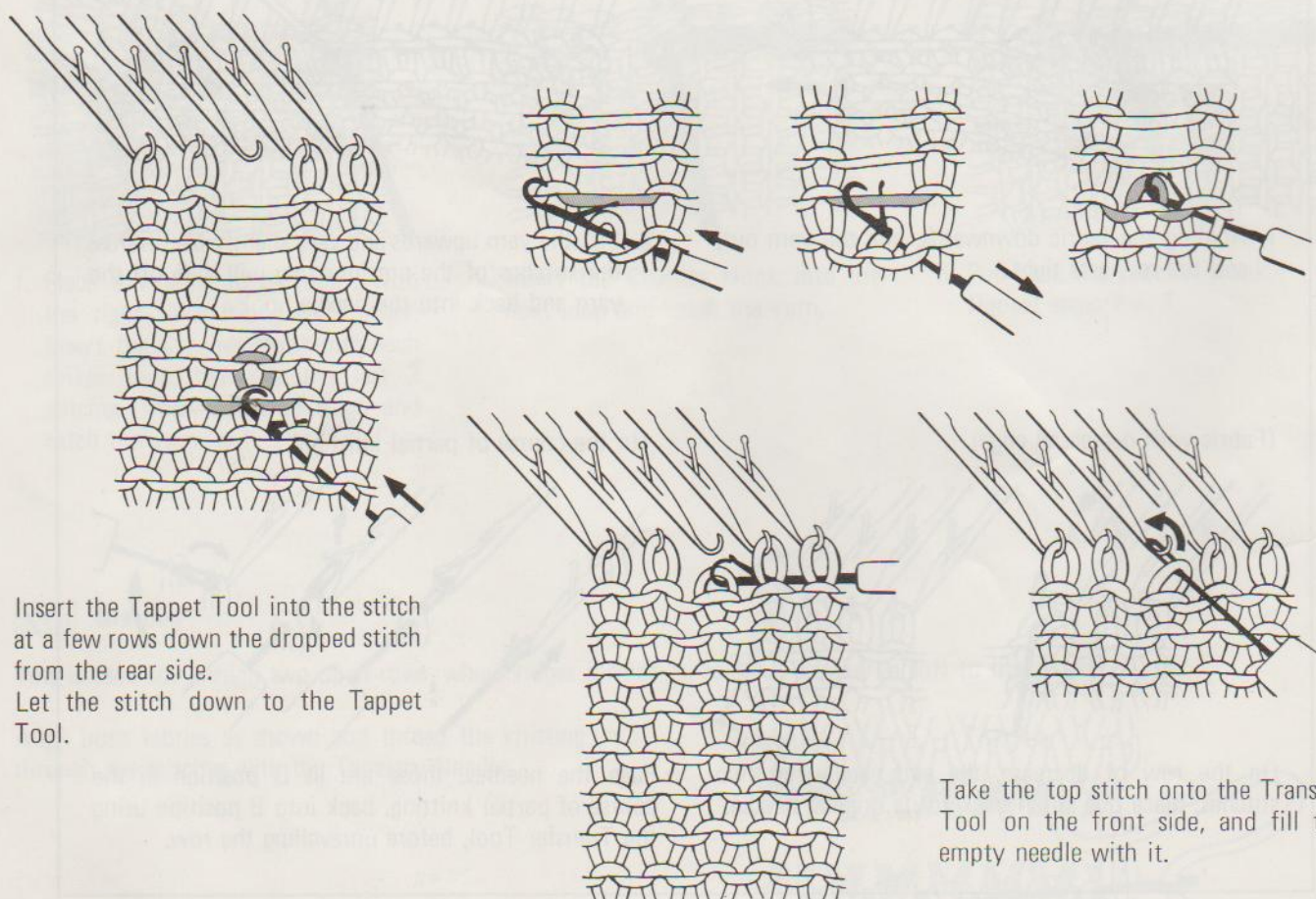
If a stitch has dropped.....

Repair the stitch using the Transfer Tool as shown below.



If a dropped stitch has run down for several rows.....

Repair the stitches using the Tappet Tool as shown below.



Insert the Tappet Tool into the stitch at a few rows down the dropped stitch from the rear side. Let the stitch down to the Tappet Tool.

Take the top stitch onto the Transfer Tool on the front side, and fill the empty needle with it.